Amendments to the Claims:

1. (currently amended) A method for making a composite material comprising the steps of:

providing a carbon substrate defining a surface;

depositing a first rhenium coating on the carbon substrate surface;

depositing ruthenium onto the rhenium coating;

heating the ruthenium and the rhenium coating in a vacuum furnace to form a rhenium/ruthenium alloy; ~~and~~

cooling [[a]] the rhenium/ruthenium alloy; and

depositing a rhenium coating on a rhenium/ruthenium alloy interlayer.

2. (currently amended) The method according to claim 1 wherein the step of heating the ruthenium and the rhenium coating ~~further comprises heating the ruthenium thereby causing~~ melts the ruthenium ~~to melt and further causing a~~ and thereby causes the rhenium/ruthenium alloy to form.

3. (currently amended) The method according to claim 1 wherein the step of heating the ruthenium and the rhenium coating melts the ruthenium and allows the ruthenium to wick through pores in the first rhenium coating.

4. (currently amended) The method according to claim 1 wherein the step of heating the ruthenium and the rhenium coating melts the ruthenium and allows liquid ruthenium to penetrate into pores in the carbon substrate.

5. (currently amended) The method according to claim 1 wherein the step of heating the ruthenium and the rhenium coating ~~further comprises heating the ruthenium so as to allow a~~ causes the rhenium/ruthenium alloy to form through atomic diffusion.

6. (currently amended) The method according to claim 1 wherein the step of heating the ruthenium and the rhenium coating further comprises heating the ruthenium and the rhenium coating to at least 2400° C and maintaining that temperature for at least 15 minutes.

7. (original) The method according to claim 1 wherein the step of depositing a rhenium coating on the carbon substrate surface further comprises depositing by chemical vapor deposition.

8. (original) The method according to claim 1 wherein the step of depositing a rhenium coating on the carbon substrate surface further comprises using a fluoride rhenium precursor.

9. (original) The method according to claim 1 wherein the amount of rhenium deposited and the amount of ruthenium deposited are selected so as to form a rhenium/ruthenium alloy comprising up to 30 weight per cent ruthenium.

10. (canceled).

11. (original) A method for making a coated carbon material comprising the steps of:

providing a carbon substrate defining a surface;

depositing a first rhenium coating on the carbon substrate surface using chemical vapor deposition of rhenium hexafluoride;

depositing a ruthenium salt onto the rhenium coating;

heating the ruthenium salt so as to leave a ruthenium layer on the rhenium coating;

further heating the ruthenium layer and rhenium layer to a temperature above the ruthenium melting point;

heating the rhenium and ruthenium at an elevated temperature so as to allow liquid ruthenium to wick through pores in the rhenium layer;

heating the rhenium and ruthenium at an elevated temperature so as to allow liquid ruthenium to enter pores in the carbon substrate;

heating the rhenium and ruthenium at an elevated temperature so as to form a rhenium/ruthenium alloy; and

depositing a second rhenium coating on the rhenium/ruthenium alloy.

12. (original) The method according to claim 11 wherein the steps of depositing rhenium and depositing ruthenium are selected so as to result in a rhenium/ruthenium alloy having up to 30 weight per cent ruthenium.

13. (original) The method according to claim 11 wherein the step of depositing a ruthenium salt further comprises depositing a solution of $RuCl_3$ in methanol and evaporating the methanol.

14. (original) The method according to claim 13 further comprising repeating the deposition and evaporation of $RuCl_3$ in methanol until a thickness of at least 10 microinches is achieved.

15. (currently amended) A method for making a composite material comprising the steps of:

providing a carbon substrate defining a surface;

depositing ruthenium metal onto the carbon substrate surface;

depositing rhenium metal onto the ruthenium metal;

heating the ruthenium metal past its melting point <u>to form a rhenium/ruthenium alloy;</u> and

solidifying [[a]] <u>the</u> rhenium/ruthenium alloy.

16. (canceled).

17. (original) The method according to claim 15 wherein the step of heating the ruthenium metal further comprises heating the ruthenium metal in a vacuum furnace.

18. (original) The method according to claim 15 wherein the step of depositing a ruthenium metal onto the carbon substrate further comprises depositing through electroplating.

19. (original) The method according to claim 15 wherein the step of depositing a rhenium metal further comprises depositing through chemical vapor deposition.

20. (original) The method according to claim 15 wherein the step of depositing a rhenium metal further comprises depositing through plasma deposition.

21. (original) The method according to claim 15 wherein the step of depositing a rhenium metal further comprises depositing through electroplating.

22. (original) A composite material comprising:

a carbon substrate defining a surface;

a rhenium/ruthenium alloy interlayer disposed on the carbon substrate surface; and

a rhenium coating disposed on the rhenium/ruthenium alloy interlayer.

23. (original) The composite material according to claim 22 wherein the rhenium/ruthenium alloy interlayer is mechanically bonded to the carbon substrate.

24. (original) The composite material according to claim 22 wherein said rhenium/ruthenium interlayer further acts to bond the rhenium coating to the carbon substrate.

25. (original) The composite material according to claim 22 wherein the carbon substrate further defines open areas and wherein the rhenium/ruthenium alloy interlayer is disposed at least partially within the spaces defined by the open areas.

26. (original) The composite material according to claim 22 wherein the rhenium/ruthenium alloy interlayer further defines a first surface in contact with the carbon substrate surface and wherein the rhenium/ruthenium alloy interlayer also defines a second surface and wherein the rhenium layer is deposited on the second surface of the rhenium/ruthenium alloy interlayer.

27. (original) The composite material according to claim 22 wherein said carbon substrate comprises graphite.

28. (original) The composite material according to claim 22 wherein said carbon substrate comprises a carbon-carbon material.

29. (original) The composite material according to claim 22 wherein the rhenium/ruthenium alloy interlayer comprises up to 30 weight per cent ruthenium.

30 to 33. (canceled).

34. (original) A coated valve body comprising:

a carbon substrate defining a surface;

a rhenium/ruthenium alloy interlayer disposed on the carbon substrate surface, and wherein the rhenium/ruthenium alloy interlayer defines a first surface in contact with the carbon substrate surface, and a second surface; and

a rhenium coating disposed on the rhenium/ruthenium alloy interlayer second surface.

35. (original) The coated valve body according to claim 34 wherein said carbon substrate further defines pores and wherein said rhenium/ruthenium alloy interlayer is disposed within said pores.

36. (original) The coated valve body according to claim 34 wherein said rhenium/ruthenium alloy interlayer comprises up to 30 weight per cent ruthenium.

37. (original) A rocket nozzle comprising:

a carbon substrate defining a surface;

a rhenium/ruthenium interlayer disposed on the carbon substrate surface; and

a rhenium coating disposed on the rhenium/ruthenium interlayer.

38. (original) The rocket nozzle according to claim 37 wherein said carbon substrate further defines pores and wherein said rhenium/ruthenium interlayer is disposed within said pores.

39. (original) The rocket nozzle according to claim 37 wherein said rhenium/ruthenium interlayer comprises up to 30 weight per cent ruthenium.